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**From:** Mike Petersen [mpetersen@landscouncil.org]  
**Sent:** 7/26/2018 2:41:43 AM  
**To:** Mullin, Michelle [Mullin.Michelle@epa.gov]; Lauren Heine [lheine@northwestgreenchemistry.org]; rlindsay@spokanecounty.org  
**CC:** ABOR461@ECY.WA.GOV; Vikki Barthels [vbarthels@srhd.org]; Whitman, Kara Michelle [kmwhitman@wsu.edu]; Greenlund, Doug [dgreenlund@spokanecity.org]; sava461@ecy.wa.gov; Doug Krapas [dougkrapas@iepc.com]; jerry@cforjustice.org; Olsen, Catherine [COlsen@SpokaneCity.org]; Amanda Parrish [aparrish@landscouncil.org]  
**Subject:** RE: [SPAM-Sender] Re: Titanium Dioxide in products  
**Attachments:** Products with titanium dioxide.docx; Supplements with titanium dioxide.docx; titanium dioxide and chlorine.docx

Michelle,

I have not been tracking who is on the list, but a volunteer has been digging up some info about products with TiO<sub>2</sub> and Lauren is digging into this as well.

I have attached a few files related to this.

Thanks,

Mike

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**From:** Mullin, Michelle <Mullin.Michelle@epa.gov>  
**Sent:** Wednesday, July 25, 2018 6:24 PM  
**To:** Lauren Heine <lheine@northwestgreenchemistry.org>; rlindsay@spokanecounty.org  
**Cc:** Mike Petersen <mpetersen@landscouncil.org>; ABOR461@ECY.WA.GOV; Vikki Barthels <vbarthels@srhd.org>; Whitman, Kara Michelle <kmwhitman@wsu.edu>; Greenlund, Doug <dgreenlund@spokanecity.org>; sava461@ecy.wa.gov; Doug Krapas <dougkrapas@iepc.com>; jerry@cforjustice.org; Olsen, Catherine <COlsen@SpokaneCity.org>; Amanda Parrish <aparrish@landscouncil.org>  
**Subject:** RE: [SPAM-Sender] Re: Titanium Dioxide in products

Hi All-

I'm checking in to see if I'm on the invite list for the workgroup meetings? I am not sure if I'm getting all the communications for the green chemistry workgroup, but would love to be able to more fully participate. I had some thoughts on this TiO<sub>2</sub> discussion that I was hoping to discuss at the next workgroup meeting, whenever that was/is.

Thanks,

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Michelle Mullin | PCB Coordinator  
U.S. Environmental Protection Agency | Region 10  
Office of Air and Waste | Ste 155  
p: 206.553.1816 | [mullin.michelle@epa.gov](mailto:mullin.michelle@epa.gov)

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**From:** Lauren Heine [<mailto:lheine@northwestgreenchemistry.org>]  
**Sent:** Tuesday, June 12, 2018 12:24 PM  
**To:** Lindsay, Robert <[RLindsay@spokanecounty.org](mailto:RLindsay@spokanecounty.org)>  
**Cc:** Mike Petersen <[mpetersen@landscouncil.org](mailto:mpetersen@landscouncil.org)>; ABOR461@ECY.WA.GOV; Vikki Barthels <[vbarthels@srhd.org](mailto:vbarthels@srhd.org)>; Whitman, Kara Michelle <[kmwhitman@wsu.edu](mailto:kmwhitman@wsu.edu)>; Greenlund, Doug <[dgreenlund@spokanecity.org](mailto:dgreenlund@spokanecity.org)>; Saskia (ECY) VanBergen <[sava461@ECY.WA.GOV](mailto:sava461@ECY.WA.GOV)>; Mullin, Michelle <[Mullin.Michelle@epa.gov](mailto:Mullin.Michelle@epa.gov)>; Doug Krapas <[dougkrapas@iepc.com](mailto:dougkrapas@iepc.com)>; Jerry White <[jerry@cforjustice.org](mailto:jerry@cforjustice.org)>; Olsen, Catherine <[COlsen@SpokaneCity.org](mailto:COlsen@SpokaneCity.org)>; Amanda Parrish <[aparrish@landscouncil.org](mailto:aparrish@landscouncil.org)>  
**Subject:** [SPAM-Sender] Re: Titanium Dioxide in products

Here is an interesting background piece on manufacturing TiO<sub>2</sub>

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On Jun 4, 2018, at 9:56 AM, Lindsay, Robert <[RLindsay@spokanecounty.org](mailto:RLindsay@spokanecounty.org)> wrote:

Thanks, Mike. This is good investigation.

I'm agreeable to looking at products that our customers flush or rinse into the collection systems, and provide information and outreach opportunities.

Rob

Ps...I'm a little bummed that sour neon worms made it onto the titanium dioxide list...who knew?

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**From:** Mike Petersen [<mailto:mpetersen@landscouncil.org>]

**Sent:** Friday, June 01, 2018 12:42 PM

**To:** Adriane Borgias (ECY) <[ABOR461@ECY.WA.GOV](mailto:ABOR461@ECY.WA.GOV)>; Vikki Barthels <[vbarthels@srhd.org](mailto:vbarthels@srhd.org)>; Whitman, Kara Michelle <[kmwhitman@wsu.edu](mailto:kmwhitman@wsu.edu)>; Greenlund, Doug <[dgreenlund@spokanecity.org](mailto:dgreenlund@spokanecity.org)>; VanBergen, Saskia (ECY) <[sava461@ECY.WA.GOV](mailto:sava461@ECY.WA.GOV)>; Mullin, Michelle <[Mullin.Michelle@epa.gov](mailto:Mullin.Michelle@epa.gov)>; Lindsay, Robert <[RLindsay@spokanecounty.org](mailto:RLindsay@spokanecounty.org)>; Lauren Heine <[lheine@northwestgreenchemistry.org](mailto:lheine@northwestgreenchemistry.org)>

**Cc:** Doug Krapas <[dougkrapas@iepc.com](mailto:dougkrapas@iepc.com)>; Jerry White <[jerry@cforjustice.org](mailto:jerry@cforjustice.org)>; Olsen, Catherine <[COlsen@SpokaneCity.org](mailto:COlsen@SpokaneCity.org)>; Amanda Parrish <[aparrish@landscouncil.org](mailto:aparrish@landscouncil.org)>

**Subject:** Titanium Dioxide in products

Green Chemistry Workgroup,

At the last task force meeting I brought up the use of titanium dioxide in consumer products and said I would compile a list. Since one of the main ways of producing titanium dioxide from ore uses a chlorination process, it can contain PCB's. For example a sunscreen I have contains 7% titanium dioxide.

One of my thoughts in doing this is that informing consumers/manufactures about products that are swallowed, rubbed on our face, might be an educational opportunity to highlight how PCB's find their way into Spokane, and ultimately the river. One of our great volunteers went "shopping" and compiled the attached list. She is also doing research trying to find how much of the titanium dioxide production is made using the chlorinated process, and how much using another sulfur based process.

The next step might be to test a few of the products on the list to see what, if any, levels of PCB's are contained in them.

Just like we have made great progress on yellow road paint, maybe this could help our overall outreach campaign - and I might cut back on donuts and skittles!

Thanks,

Mike